U. S. FOREST SERVICE

RESEARCH NOTE LS-11

KE STATES FOREST EXPERIMENT STATION • U. S. DEPARTMENT OF AGRICULTURE

Changes in Northern Minnesota Timber Harvest

A survey of timber cutting made in 1961 measured the volume of the 1960 timber harvest in Minnesota.[1] This work was part of the current comprehensive Forest Survey of the State, and a full report will be made when the inventory of standing timber is complete. Because of the need for current information on the forest economy in northern Minnesota, the figures on timber cut and products output in 17 northern counties are published here ahead of schedule.

All of the area's primary wood-processing plants were canvassed in person or by mail to determine their 1960 receipts of pulpwood, logs, bolts, and other roundwood products. Measurements of felled trees on 75 widely scattered logging operations furnished factors for converting these receipts into volumes of standing timber removed in logging. Comparing results with those of a similar survey made 8 years earlier reveals changes in timber use, some of which are discussed below.

Total Cut Was Less; More Came From Larger Trees. — The total cut of growing stock in the 17-county area was 1⅓ million cords in 1960 (table 1).[2] This included 251 million board feet of logs that were of saw log size and quality plus 825,000 cords of cordwood. Most of the cordwood and nearly half of the saw log size material were used for pulpwood. Thus the 251 million board feet of saw log size material harvested should not be confused with lumber production, which was considerably less. The total cut from growing stock was about 15 percent less than in 1952 (fig. 1).

The hardwood cut (except aspen) was down 24 percent, the softwood cut was down 19 percent, and the aspen cut was about the same as 8 years ago.

The cut from sawtimber-size trees, on the other hand, was 30 percent greater than in 1952. This reflects an increase in softwood and aspen sawtimber volume available, and a shift in the intensity of cutting from some counties in the Central Pine district to counties in the northeast district where the timber generally runs heavier to sawtimber-size trees. An increasing proportion of the pulp-

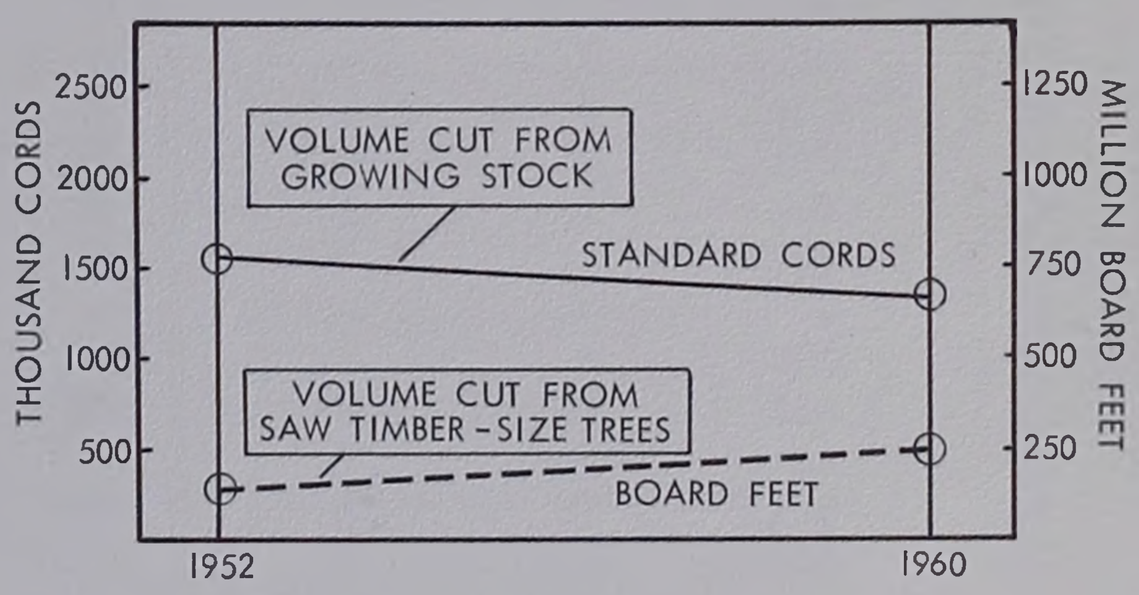

FIGURE 1. — A comparison of the 1952 and 1960 timber cut in 17 northern Minnesota counties.

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[1] *The Office of Iron Range Resources and Rehabilitation, the Minnesota Division of Forestry, and the Land Commissioners of Aitkin, Becker, Beltrami, Cass, Clearwater, Crow Wing, Itasca and Koochiching Counties assisted the Station in this survey.*

[2] *The definition of growing stock is complex, but in general it includes live trees at least 5 inches in diameter at breast height that are presently or potentially merchantable.*

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wood cut comes from trees of sawtimber size that are rated as sound culls for saw log uses and from upper stems beyond the 4-inch minimum in some softwood species.

Less Lumber, More Pulpwood Being Produced. — The output of some products has dropped off, while that of others has increased. In 1960 the lumber production in the 17 northern counties was 112.5 million board feet (table 2), a drop of about 25 percent from 1952. The output of fuelwood and mine timbers also declined, following the long-time trend for these products. In contrast pulpwood, veneer logs, poles and piling showed increases.

In 1960 there were 765 primary wood-processing plants operating in the 17-county area (table 3). Although small sawmills were in the majority, their number was about 10 percent fewer than in 1952. On the other hand, pulp and paper mills have expanded and modernized on a large scale, and additional small wood-using enterprises, such as charcoal plants, novelty plants, and fencing companies, have sprung up.

Value of Rough Products and Man-Days of Employment. — The value of rough forest products harvested in the northern counties is estimated at 31 million dollars in 1960 (table 4, reverse side of this page), compared to about 38 million dollars 8 years previously. Prices for most products have not varied much, but the volume of products harvested has declined.

The smaller timber harvest in 1960, together with a higher degree of mechanization, resulted in less employment for woods workers. It is estimated that about 2 million man-days of labor were required to cut and deliver (to plant or loading area) the timber products harvested in the entire State (table 4). More than three-fourths of the labor was expended in the 17-county area where most of the State's pulpwood, saw logs, mine timbers, and other products were cut.

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TABLE 1. — *Timber cut from growing stock and sawtimber on commercial forest land in 17 northern Minnesota counties; by species group, 1960*

County	Volume cut							
	From growing stock				From sawtimber			
	Total	Hdwds[1]	Aspen	Sftwds	Total	Hdwds[1]	Aspen	Sftwds
	Thousand std. cords				*Thousand board feet*[2]			
Aitkin	59	13	34	12	12,060	4,120	5,900	2,040
Becker	21	4	8	9	5,140	710	1,310	3,120
Beltrami	110	5	44	61	21,440	1,440	7,130	12,870
Carlton	39	3	29	7	5,550	600	3,270	1,680
Cass	70	9	25	36	14,550	1,460	3,650	9,440
Clearwater	47	5	32	10	8,650	1,150	5,000	2,500
Cook	89	5	3	81	17,280	2,190	1,210	13,880
Crow Wing	29	6	8	15	6,890	960	1,990	3,940
Hubbard	44	2	21	21	7,930	340	2,520	5,070
Itasca	135	12	46	77	28,330	3,060	9,010	16,260
Koochiching	188	11	69	108	30,970	1,890	9,110	19,970
Lake	121	2	10	109	22,680	910	2,110	19,660
Lake of the Woods	36	—	13	23	5,620	—	1,460	4,160
Mahnomen	4	1	2	1	880	180	530	170
Pine	21	4	14	3	3,310	1,000	1,780	530
St. Louis	319	8	129	182	58,260	2,220	19,810	36,230
Wadena	9	—	2	7	1,880	60	190	1,630
Total	1,341	90	489	762	251,420	22,290	75,980	153,150
State total	1,590	272	527	791	320,350	78,100	82,120	160,130
17-county total as a percent of State total	84	33	93	96	78	29	93	96

[1] *All commercial hardwood species except aspen.*

[2] *International ¼" log rule.*

TABLE 2. — *Timber products output by products for 17 northern Minnesota counties, 1960*

County	Lumber	Veneer & cooperage logs	Pulpwood	Poles and piling	Mine timbers	Misc. industrial wood	Posts	Fuelwood
	MBM	*MBF*[1]	*M cds.*	*M pcs.*	*M cds.*	*M cds.*	*M pcs.*	*M cds.*
Aitkin	7,400	200	34	1	1	3	230	19
Becker	4,300	100	6	4	—	—	175	15
Beltrami	12,600	200	80	32	—	1	300	17
Carlton	1,900	—	29	—	—	1	30	21
Cass	9,300	100	37	13	—	1	80	38
Clearwater	5,900	—	33	1	—	1	50	14
Cook	5,400	400	83	7	—	—	5	2
Crow Wing	5,700	—	12	1	—	—	60	18
Hubbard	4,200	100	32	3	—	1	75	15
Itasca	16,300	400	89	40	1	4	185	32
Koochiching	5,800	100	169	75	—	3	415	9
Lake	5,900	500	113	18	1	1	25	3
Lake of the Woods	1,300	—	33	8	—	—	135	4
Mahnomen	600	—	1	---	—	—	5	4
Pine	1,100	100	12	—	—	1	135	18
St. Louis	23,600	700	265	25	5	10	200	37
Wadena	1,200	—	2	3	---	—	25	11
Total	112,500	2,900	1,030	231	8	27	2,130	277
State total	161,300	13,000	1,048	235	8	30	4,450	610
17-county total as a percent of State total	70	22	98	98	100	90	48	45

[1] *International ¼" log rule.*

(Tables 3 and 4 on reverse side)

TABLE 3. — *Number of primary wood-using plants,[1] in 17 northern Minnesota counties, 1960*

County	All mills	Sawmills[2]				Pulp mills	Veneer mills	Misc. plants[3]
		Total	Large	Medium	Small			
Aitkin	44	42	—	—	42	—	—	2
Becker	38	36	—	—	36	—	—	2
Beltrami	51	46	1	2	43	1	—	4
Carlton	43	40	—	—	40	2	—	1
Cass	52	50	—	2	48	—	—	2
Clearwater	39	38	—	1	37	—	—	1
Cook	23	22	—	2	20	—	—	1
Crow Wing	27	26	—	2	24	—	—	1
Hubbard	27	25	—	1	24	—	—	2
Itasca	89	83	—	1	82	1	1	4
Koochiching	40	35	—	1	34	1	—	4
Lake	25	25	—	3	22	—	—	—
Lake of the Woods	15	13	—	—	13	—	—	2
Mahnomen	14	13	—	—	13	—	—	1
Pine	16	15	—	—	15	—	—	1
St. Louis	197	191	—	4	187	1	—	5
Wadena	25	23	—	—	23	—	—	2
Total	765	723	1	19	703	6	1	35
State total	1,345	1,282	1	26	1,255	9	7	47
17-county total as a percent of State total	57	56	100	73	56	67	14	74

[1] *Excludes idle mills.*

[2] *Sawmills: Large — Annual lumber output in excess of 5 million board feet.*
Medium — Annual lumber output from 1 million to 5 million board feet.
Small — Annual lumber output less than 1 million board feet.

[3] *Includes match, cooperage, charcoal, novelty, lath and shingle mills, etc.*

TABLE 4. — *Value of rough forest products and man-days of work expended to harvest these products in 17 northern Minnesota counties, 1960*

County	Value of rough forest products FOB cars[1]				Man-days of employment[2]			
	Total	Lumber	Pulpwood	Other[3]	Total	Lumber	Pulpwood	Other[3]
	Thousand dollars				*Thousand man-days*			
Aitkin	1,400	600	440	360	78	23	27	28
Becker	720	400	90	230	36	13	5	18
Beltrami	2,670	1,130	1,200	340	129	39	64	26
Carlton	780	180	350	250	52	6	23	23
Cass	1,940	880	510	550	101	29	30	42
Clearwater	1,100	560	360	180	60	18	26	16
Cook	2,160	470	1,640	50	88	17	67	4
Crow Wing	890	500	180	210	46	17	10	19
Hubbard	1,010	400	420	190	56	13	26	17
Itasca	3,410	1,430	1,410	570	165	50	71	44
Koochiching	3,540	500	2,710	330	178	18	135	25
Lake	2,620	550	1,970	100	116	18	90	8
Lake of the Woods	760	130	540	90	37	4	26	7
Mahnomen	120	50	10	60	8	2	1	5
Pine	480	90	160	230	35	4	10	21
St. Louis	6,940	2,140	4,030	770	343	72	212	59
Wadena	280	120	30	130	18	4	2	12
Total	30,820	10,130	16,050	4,640	1,546	347	825	374
State total	40,100	14,700	16,400					
17-county total as a					9,000	2,036	492	839	705
percent of State total	77	69	98		51	76	71	98	53

[1] *Unit prices by species for the important forest commodities were obtained from "Minnesota Forest Products Marketing and Pricing Review" (January-July 1961) by the Office of Iron Range Resources and Rehabilitation.*

[2] *Based on material furnished by a few producers and dealers of forest products. Labor input per unit of measure: Pulpwood, 0.8 man-day per cord; lumber (stumpage to rough lumber), 3.05 man-day per MBM; other products, 1 man-day per cord. The input figures take into account the cutting, skidding, and hauling operations, road development, and other activities. Labor input figures of individual operations are subject to wide fluctuations, depending on volume and quality of timber per acre, topography, accessibility, degree of mechanization, etc.*

[3] *Fuelwood, posts, pilings, poles, mine timbers, charcoal, etc.*